## REMARKS/ARGUMENTS

The specification has been revised to conform it to the preferred format for U.S. patent applications, and a Substitute Specification and Comparison Copy are submitted herewith.

Claims 11-18 are amended; claims 19-21 are new; and claims 11-21 are pending in this application. No new matter has been entered. Support for the amendment can be found throughout the instant application.

**Claim Rejections – 35 U.S.C. §112:**

Claims 11-18 are rejected under 35 U.S.C. 112, second paragraph. With respect to claims 11 and 13, applicant respectfully disagrees, but has amended the rejected claims to delete "preferably". With respect to claims 12-18, applicant has amended the claims to ultimately depend from claim 11. Accordingly, the rejections no longer apply.

**Claim Rejections – 35 U.S.C. §103:**

Claims 11, 13, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhartz (US 4,667,889) in view of Maag (EP 0401781). The rejection is traversed.

Claims 11-18 have not been substantively amended, and therefore do not raise new issues requiring further search and/or consideration.

The references above do not teach or suggest, inter alia, "the winding ratio is changed in essentially integral steps so that, with each change, the post-decimal point part of the winding ratio will change by 0.1 at the most". The Examiner stated on page 4 of the Office Action, that Gerhartz recites essentially integral steps. This is not correct, as "integral steps" are further defined within the claim language. Fig. 1 of Gerhartz is a diagram of the winding ratio vs. package diameter, which unambiguously shows that the steps of the winding ratio are non-integral.

The Examiner further stated on page 4 that Maag discloses that a winding ratio which changes by 0.1193; assumedly the Examiner meant 0.01193, referring to differences of values listed on Column 6 of the table shown on page 7 of Maag. This is incorrect, as Column 6 shows the rotational speed ratio of the bobbin vs. the rotational speed of a turning thread shaft that forms part of the cross-winding device 1. This ratio, however, must not be confused with the "winding ratio", since several revolutions of the turning thread shaft are necessary to accomplish one double-stroke (to-and-fro stroke) of the cross-winding device 1. An example is given on page 5, lines 38-39 of Maag, which reads in the language of the corresponding translation (page 4, paragraph 3): "*The yarn guide becomes over a turning thread wave with the number of threads 5 revolutions/double stroke driven*".

The winding ratio, however, is actually shown in the 1st column of the table on page 7. The header of this 1st column is named "Windungszahl" and "Number of turns" in the machine translation, respectively, which has the same technical meaning as the term "winding ratio" used in the present application.

The Examiner might have been confused by the fact that the character 'V' has been used in the present application to designate the winding ratio, whereas in Maag the same character 'V' has been used to designate the reciprocal of the winding ratio, see page 1, lines 34-36. Even more confusing, Maag does not consistently use the character 'V' to designate the reciprocal of the winding ratio, but also uses this character to designate the rotational speed ratio of the bobbin vs. the rotational speed of the turning thread shaft. However, the disclosure of Maag, particularly the description from page 5, lines 34 to the end of page 6 and the values in the table on page 7, unambiguously prove that the 1st column of the table on page 7 contains values of the stepped winding ratio for seventeen consecutive steps.

Based on the values of the 1st column of the table on page 7, Applicant has prepared the following table in a format similar to the table on pages 7-8 of the present patent application. It contains the columns step #; the winding ratio [Windungszahl] according to the values of the 1st column of the table on page 7; the difference in winding ratio between steps; the post-decimal point part of the values of the winding ratio; and the post-decimal point difference.

| Step # | [Windungszahl] Winding ratio | Difference in winding ratio between steps | Post-decimal point part | Post-decimal point difference |
|---|---|---|---|---|
| | | | | |
| 1 | 6.202704 | | 0.202704 | |
| 2 | 5.403069 | 0.799635 | 0.403069 | 0.200365 |
| 3 | 4.859086 | 0.543983 | 0.859086 | 0.456017 |
| 4 | 4.601933 | 0.257153 | 0.601933 | 0.257153 |
| 5 | 4.201681 | 0.400252 | 0.201681 | 0.400252 |
| 6 | 3.858322 | 0.343359 | 0.858322 | 0.656641 |
| 7 | 3.601268 | 0.257054 | 0.601268 | 0.257054 |
| 8 | 3.401361 | 0.199907 | 0.401361 | 0.199907 |
| 9 | 3.201229 | 0.200132 | 0.201229 | 0.200132 |
| 10 | 3.036376 | 0.164853 | 0.036376 | 0.164853 |
| 11 | 2.858123 | 0.178253 | 0.858123 | 0.821747 |
| 12 | 2.715178 | 0.142945 | 0.715178 | 0.142945 |
| 13 | 2.600916 | 0.114262 | 0.600916 | 0.114262 |
| 14 | 2.455313 | 0.145603 | 0.455313 | 0.145603 |
| 15 | 2.401306 | 0.054007 | 0.401306 | 0.054007 |
| 16 | 2.286446 | 0.11486 | 0.286446 | 0.11486 |
| 17 | 2.200898 | 0.085548 | 0.200898 | 0.085548 |

From the 3rd column of the table above it becomes perfectly clear that the winding ratio is NOT changed in essentially integral steps, but is changed in steps between 0.799635 and 0.085548.

Further, in the 5th column of the table above it can be seen that - except for steps #15 and #17 - with each change, the post-decimal part of the winding ratio will change by values much higher than 0.1. Indeed, except for steps #15 and #17 the values scatter between 0.114262 and 0.821747 with an approximately equal distribution. The values for steps #15 and #17, however, must be regarded as merely inadvertent disclosure in the light of the widely scattering values. Further, it has to be noted that according to claim 11 of the present invention with each change, the post-decimal point part of the winding ratio will change by 0.1 at the most.

Further, in the 4th column of the table above it can be seen that the post-decimal point part of the winding ratio is NOT close to 0 or 0.50 or 0.33 or 0.25.

Therefore, claim 11 and new claims 19 to 21 are not rendered obvious by Gerhartz in view of Maag. Rather, even if a skilled person would combine the disclosures of Gerhartz and Maag this person would not find the least suggestion to come to the present invention. Gerhartz does not disclose any problems that might occur with bobbins wound according to the "stepped precision winding" process. Maag realized that problems might occur in the context of "stepped precision winding", but believed to solve this problem by calculating very specific values within each winding ratio. It has to be noted that Maag only tried to compensate control variations within a respective step of the precision winding, but did not at all take in account the transitions between the steps, nor that the values of consecutive steps are interrelated with each other. Particularly, the approach of Maag did not recite rules for setting interrelated values for all steps in the process of "stepped precision winding".

The Examiner also alleged that one of ordinary skill in the art is expected to routinely experiment with parameters, especially when the specifics are not disclosed, so as to ascertain the optimum of workable ranges for a particular use. Accordingly, it would have been obvious, through routine experimentation and optimization, for one of ordinary skill in the art to with each change make the post-decimal part of the winding ratio change by 0.1 at most, preferably by 0.03 at the most, more preferably by 0.01 at the most.

This allegation is incorrect, especially in consideration of the disclosure of Maag. Maag has explained that the value of the winding ratio is so critical that even deviations in the 7th or 8th order of magnitude affect the quality of the bobbin (page 1, lines 37-39). This means that one of ordinary skill who carries out routine experiments would have to try out millions of different values of the winding ratio, and therefore would give up very soon without any success. On the other hand, Maag has carried out an in-depth scientific analysis of this problem, but has come to a solution that is totally different from the approach of the present invention. Hence, there is not the least room for assumption that merely by routine experimentation the features of the present invention could be found.

In light of the above, claim 11, and all claims depending therefrom, are not obvious in view of the references.

Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhartz in view of Maag, and in further view of Jennings et al. (US 6,311,920). The rejection is traversed. Claims 12 and 18 derive patentability from claim 11, and also recite novel and non-obvious claim limitations, which are not taught or suggested by the prior art.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhartz in view of Maag, and in further view of Poppinghaus et al. (US 5,439,184). The rejection is traversed. Claim 14 derives patentability from claim 11, and also recites novel and non-obvious claim limitations, which are not taught or suggested by the prior art.

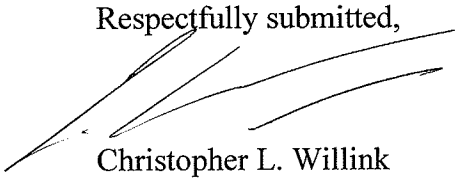
With respect to the new claims 19-21, Applicant notes that the Examiner has admitted that Gerhartz is silent with regards to that with each change, the post-decimal part of the winding ratio will change by 0.1 at most (claim 11), preferably 0.03 at the most (now new claim 19), more preferably 0.01 at the most (now new claim 20); and that the post-decimal point part of the winding ratio is at least two-digit (claim 13) and preferably close to 0 or 0.50 or 0.33 or 0.25 (now new claim 21). Accordingly, new claims 19-21 also recite novel and non-obvious claim limitations, which are not taught or suggested by the prior art

## CONCLUSION

In view of the foregoing, applicant submits that this application is in condition for allowance, and a formal notification to that effect at an early date is requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 273-4380 (direct dial).

Respectfully submitted,



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